LAUREA

PATIENT GUIDANCE ON DIABETES MELLITUS SELF-MANAGEMENT

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Patient guidance on diabetes mellitus self-management
A literature review

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Bachelor of Health Care
Degree Program in Nursing
Bachelor's Thesis

April, 2010

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Abstract

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Patient Guidance on Diabetes Mellitus self-management: A Literature Review

Year 2010 Pages 34

The purpose of this literature review was to describe the guidance of diabetic mellitus patients on self-management by reviewing existing literature. The aim of the study was to explore the various areas in which patients need guidance and how guidance can be used as a method of assisting patients achieve self-management. The research question is: how does guidance help patients in achieving self-management?

The data collection method involved reviewing relevant literature which consisted of current and scientific materials. In addition, United Nations publications and educational books for research have also been used.

The findings suggest that there are three major areas which patients need guidance on. These areas are, in planning the guidance, which was divided into three areas: individuality, goal setting and continuity of care. Contents of guidance; dietary guidelines, insulin therapy, exercise and foot care. The third area of guidance was supporting self-management of diabetes; Empowering the patient and support & confidence in living with diabetes.

As a conclusion, the findings can be used to create a brochure or a guide book for foreign patients who are diabetic. The brochure should be in English as there are already Finnish brochures and should be available in schools and all hospitals everywhere.

Keywords: Patient guidance, diabetes mellitus and self-management

Huhtikuu 2010

Laurea ammattikorkeakoulu
Otaniemi
Bachelor of Health Care and Social Services
Degree Programme in Nursing

Tiivistelma

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Diabetes Mellitus-potilaan ohjaaminen itsehoitoon: **Kirjallisuuskatsaus**

Vuosi 2010 Sivut 34

Tämän kirjallisuuskatsauksen tarkoituksena oli kuvailla diabetes mellitus-potilaiden itsehoidon ohjaamista tarkastelemalla olemassa olevaa kirjallisuutta. Tutkimuksen tavoitteena oli tutkia niitä lukuisia alueita joissa potilaat tarvitsevat ohjausta ja sitä kuinka ohjaamista voidaan käyttää menetelmänä, jonka avulla potilaita autetaan toteuttamaan itsehoitoa. Tutkimuskysymys on: kuinka ohjaus auttaa potilaita saavuttamaan omaa tehokkuutta?

Tiedonkeräysmenetelmänä oli tarkoituksenmukaisen kirjallisuuden tarkastelu, joka koostui ajankohtaisista ja tieteellisistä aineistoista. Tämän lisäksi käytettiin myös Yhdistyneiden Kansakuntien tutkimusjulkaisuja ja –opetuksia.

Tulokset viittaavat siihen, että on olemassa kolme pääaluetta joissa potilaat tarvitsevat ohjausta. Nämä alueet ovat, ohjauksen suunnittelussa, joka jaettiin kolmeen osaan: yksillöllisyys, tavoitteiden asettaminen ja hoidon jatkuvuus. Ohjauksen sisältö; ravinto-ohjeet, insuliinihoito, liikunta ja jalkojen hoito. Ohjauksen kolmas alue oli diabeteksen itsehoidon tukeminen; potilaan voimauttaminen ja tuki & itseluottamus diabetes-potilaana.

Lopuksi voisi ehdottaa tulosten käyttämistä esitteen tai opaskirjan tekoon ulkomaalaisille diabetes- potilaille. Esitteen tulisi olla englanniksi koska suomenkielisiä oppaita on jo olemassa ja sen tulisi olla saatavilla kouluissa ja kaikissa sairaaloissa.

Avainsanat: Potilasohjaus, diabetes mellitus ja itsehoito

Contents

1 Introduction

Diabetes mellitus is according to statistics one of the leading causes of mortality, everyone has something to say about it but how many people infected and affected know and understand the true implication of Diabetes mellitus? The effects of Diabetes mellitus include long-term management, dysfunction and failure of various organs (WHO 1999) It is no exaggeration to describe diabetes as one of the major contributors to ill-health and premature mortality world-wide. Globally, across all ages, it is estimated that at least 1 in 20 deaths are attributable to diabetes and in adults aged 35-64 the proportion is at least 1 in 10 deaths. (World Health Organization 1999)

According to the Finnish Diabetes Association, there are about 40,000 people with type 1diabetes and about 250,000 people suffering from diabetes mellitus in Finland. About 4,000 children under the age of 16 have diabetes. The number of undiagnosed cases of type 2 diabetes is estimated at 200,000. The World Health Organization (WHO) estimates that more than 180 million people worldwide have diabetes. This silent epidemic claims as many lives annually as HIV/AIDS.

Kolmiosairaala is a future hospital, and its goal is to concentrate the practice of all the medical procedures and special care. This study aims to benefit the future hospital and its medical staff with a theoretical insight of patient guidance (which is primarily done by the health professionals) and the importance of reducing costs through empowering patients to better manage their illness which will result in the reduction of hospital costs as there will be fewer visits to the medical centres. The study also aims at raising awareness among nursing students, nurses and nurse educators of the global epidemic of diabetes and ways of self-management by reviewing existing literature on the subject.

Diabetes Mellitus has invaded our society and it is affecting the health system in many ways. Health costs are at a high rise and the only way to curb this invasion is to continuously and tirelessly emphasize on self-management of diabetes mellitus care which involves both preventive measures for the risk groups and ways of improving the lives of people suffering from diabetes mellitus. Patient guidance contents can only be functional through the availability of theoretical researched information which must be made in a timely manner and the methods described.

2 Diabetes mellitus

Diabetes is a disease which is caused by the inadequate production of insulin by the body or by the body not being able to properly use the insulin that is produced thereby resulting in hyperglycaemia of high blood glucose levels. Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, either the body does not produce enough insulin or the cells ignore the insulin. Insulin is necessary for the body to be able to use sugar. Sugar is the basic fuel for the cells in the body and insulin takes the sugar from the blood into the cells. When the glucose builds up in the blood instead of going into the cells, it can cause two problems: right away the cells maybe starved for energy, two, over time high blood glucose levels may hurt the eyes, kidneys, nerves and the heart.

In-order to understand diabetes type 2, one must first understand how glucose is normally processed in the body. Glucose is the main source of energy for the cells that make up muscles and other tissues. Glucose comes from two major sources, the food we eat and the liver. During digestion, sugar is absorbed into the bloodstream, normally; the sugar then enters cells with the help of insulin. The hormone insulin comes from the pancreas, when one eats, the pancreas secrete insulin into the blood stream. As insulin circulates it acts as a key by unlocking microscopic doors that allow sugar to enter the cells. Insulin lowers the amount of sugar in the bloodstream, as the blood sugar level drops, so does the secretion of insulin from the pancreas. The liver acts as a glucose storage and manufacturing centre, when one's insulin levels are low or one has not eaten for example, the liver releases the stored glucose to keep the glucose levels within a normal range. In type 2 diabetes, this process works improperly, instead of moving into the cells, sugar builds up into the bloodstream. This occurs when the pancreas does not make enough insulin or the cells become resistant to the action of insulin.

The main signs and symptoms of diabetes mellitus are; increased thirst, frequent urination, extreme hunger, weight loss, fatigue, blurred vision, slow healing sores and frequent infection. Diabetes occurs in people over 35 years, some of its risk factors include; weight, inactivity, family history, race, age, pre-diabetes and gestational diabetes. Treatment of diabetes mellitus is a lifelong commitment that involves; monitoring blood, healthy eating, regular exercises and diabetes medication or insulin therapy.

Diabetes mellitus has varies complications; some are short term where-else some are long-term complications. The short-term complications, if left untreated can lead to seizures and loss of consciousness, these are; diabetic ketoacidosis, hyperglycaemia and hypoglycaemia. On the other hand, long term complications develop gradually, the earlier one develops type 2 diabetes and the less one controls their blood sugar the higher the risk of complications. Some of the long-term complications include: heart and blood vessel diseases, nerve damage, kidney damage, eye damage, foot damage, skin and mouth conditions, osteoporosis and Alzheimer disease.

3 Purpose of the study and research question

The purpose of this literature review is to describe the guidance of diabetic mellitus patients on self-management by reviewing existing literature. The research question is: How does guidance help patients in achieving self-management. The study evaluates each step of guidance on self-management with the aim of finding out how each individual step affects the lives of diabetes. Bearing this in mind the scope of this thesis project is limited to only the issues of patient guidance and self-management related to diabetes mellitus.

4 Data

The method used for carrying out the study was a systematic literature review. The overall purpose of a review of literature in a research is to present a strong knowledge base for the conduct of the research project. The knowledge uncovered from a critical review of the literature contributes to the development, implementation, and results of a research study. (LoBiondo and Haber; 79-80 2006) The task of reviewing research literature involves the identification, selection, critical analysis and written description of existing information on a topic (Polit and Beck, 2003:111).The purpose of a literature review includes:

1. To acquire knowledge on a topic
2. To evaluate current practices and make recommendation for change
3. To develop evidence-based clinical protocols and interventions to improve clinical practice.
4. To develop ideas (Polit and Beck, 2006: 134)

The handling of data in this particular study was divided into three phases. These are; literature search, data selection and data analysis.

4.1 Literature search

The literature searches were made from electronic databases such as: OVID databases (Journals at OVID FULL TEXT). The search was limited to years 2000-2010 so as to acquire up to date information for the research. The articles were all of full texts. The feature mapping was used so as to allow the search for topics in their own words as opposed to having to enter a term that is exactly the same as a subject heading in the database (Polit and Beck, 2003: 92). Throughout the literature gathering process, the author only selected research articles based upon empirical studies. To ensure compliance with this criterion, the author used scientific journals.

4.2 Data selection

The data for this study was selected from the literature searches according to the relevance to the research question. The selection was to find recent research done on patient guidance on diabetes mellitus and self-management

The criterions for choosing the data were as follows;

- The articles had been published between the years 2000-2010
- The research articles were full texts and could be used free of cost
- The presented research reflected on the current clinical practice in nursing
- The research had been carried out in English
- The content of the article were related to the research question

The contents of the research articles were much broader than that of the topic of this study and all the keywords would be present in all the articles. This resulted to setting the limit to only the relevant parts of the study findings. Data selection was done on the basis of the purpose statement and research question. The studies used in the data have been described in the appendices; they include the author, year of

publication, place of publication, purpose, and method of data gathering, participants, central findings and significant findings.

The following is an example, in the Journal of clinical nursing in diabetes, authors Arun K (2004) carried out a literature review in-order to explore self-care in diabetes and present a model of factors that affect self-care according to reviewed literature. The data was collected from search databases ProQuest, PsycINFO and Medline from 1995-2002. The central finding, main components of the model clarify how knowledge, physical skills and emotional factors as well as self-efficacy influence self-care which again affects metabolic control. The significant finding to this study was that the study outlined the factors which affect self-efficacy in management of diabetes.

Author and year of publication	Publication of the Article
Arun K (2004)	Journal of Clinical Nursing
Hill J (2009)	Journal of Nursing Standard
Jerreaal L (2009)	Journal of Nursing Standard
Kathaleen et al (2009)	Journal of trans-cultural nursing
Lowey A (2005)	Nursing standard
Muhlhauser (200)	Journal of Clinical Nursing
Martha Funnel (2004)	Journal of clinical diabetes
Wallymahmed (2006)	Journal of Nursing standard
Vaughan L (2005)	Journal of Nursing standard

Table1. The results of the literature search

4.3 Data analysis

Qualitative data analysis involves thinking of the data one wants to collect, collecting the data, then identifying the key concepts and then placing these concepts into categories and thinking about them before finally writing a report. (Seidel 1998)

Data analysis took the following steps:

- Systematic reading of the articles, publications
- Pointing out the significant areas of self-management and patient guidance
- Determining the core meaning of important content
- Assembling the core meanings of the data from the articles
- Interpretation of data

(LoBiondo-Wood, Haberz0, 2006)

The first step of analyzing the data started by; the author read all the articles related to the purpose statement and research question of this study. The articles were then rated with stars referring to their applicability for this study. Five stars were given to the articles that seemed most applicable to this study. During the tentative analysis of the content, common patterns and themes were found. In the initial coding, the data was divided into two main categories patient guidance and self-management. According to this arrangement, the data was sorted, aggregated and synthesized.

To give an example of the analysis process, the concept of planning and its subtitles were chosen in the following way: When the pile of researches consisted of the following principles; guiding the patient, goal setting and continuity of care, the umbrella concept to this category was created in the name planning the guidance. Below is a figure of the process of creating the main title.

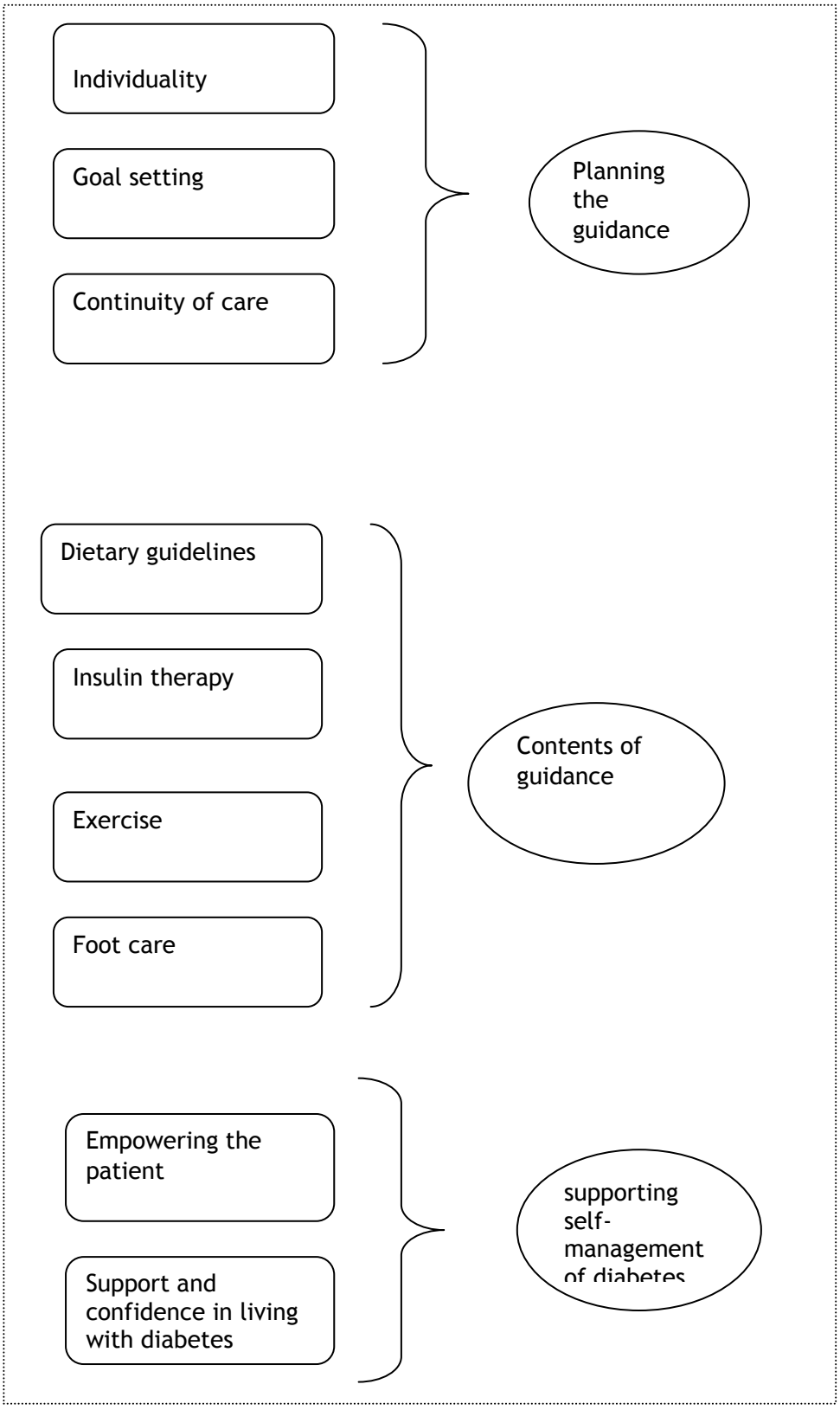

Figure1. Findings from the data analysis process

The analysis process created three main categories, which were, planning the care, self-management, and individuality. In the chapters which follow, the above categories have been intensively discussed according to the findings together with their sub-categories.
A research article table was created to highlight the main findings of each of the selected articles. This was done to reveal the applicability of each of the articles to this study.

5 Findings

Guidance is primarily counselling, teaching, advising, giving direction, or giving information to individuals to help them develop their whole personality to the extent that they are able to make adequate adjustment to the situations in which they find themselves in. Guidance can be done through helping individuals find out their potential and needs and help them formulate plans of actions in order to develop to an extent that they can fully master their situations. Diabetes mellitus is one of the major chronic diseases; therefore, it is best treated by a balance of traditional medical care and the day to day practice of self-management skills. Guidance on self-management is vital in the care of diabetes mellitus; it assists patients in taking responsibility for the day to day care of their disease. Self-management also assists patients in learning that they can influence the adverse effects of their disease.

5.1 Planning the guidance

Planning the guidance has been divided into three sub-categories, these are: individuality, goal setting and continuity of care. Diabetes mellitus involves a lifelong adjustment to the condition; it takes some time for a patient to be fully oriented to his new life. The journey of a diabetic patient involves planning a day to day programme. Lifestyle changes, diet regulations, insulin therapy, foot care and exercise, all involve planning. Planning of the guidance is mostly done by nurses and patients who work together to create an individualized plan for the specific patient.

5.1.1 Individuality

In diabetes education, programmes to train and motivate patients to therapeutic autonomy are regarded as crucial to increase both the patients' quality of care and independence. However, in most cases, the patients remain excluded from medical decision processes, this decisions include; patients defining their individual therapeutic objectives and in selecting certain treatment strategy. Patients become more knowledgeable and independent through the successful implementation of patient education, their right to participate or even to take responsibility for these medical decisions is becoming obvious, patients should be involved in the decision making process. It is the work of the patients to balance the risks they are prepared to take against the efforts they are prepared to make rather than physicians or other parties making these choices.

The importance of patient participation as particularly relevant to diabetes mellitus, not even perfect, long term therapeutic co-operation can eliminate diabetic complications they can only reduce the risk of developing them. The benefits, lack of benefits and unwanted effects and interventions need to be communicated to the patient in an unbiased manner, so that he/she can make an informed choice with regard to different therapeutic goals and strategies.

A research study carried out recently emphasized on the need for information for diabetes and the importance of patient autonomy. Patient guidance in diabetes has been successful in training and motivating patients to assume a more active and independent role in monitoring and treating their disease resulting in an improvement of patient-oriented outcomes. Traditionally, diabetes education has mainly constituted guidelines on patients following doctors' instructions in order to increase patient compliance to medical professionals' defined therapeutic goals and treatment strategies. As a framework, the article defines patients' rights and autonomy in regards to their health issues. Patients need to become more involved in medical decision making with respect to each individual need and therapeutic goals.

A newly diagnosed patient has no way of knowing of what to do with the information he receives from the doctors. The first step to his new journey is; being guided by health specialities. Guidance involves different areas of the patient's life. In diabetes

education, programmes to train and motivate patients to therapeutic autonomy are regarded very vital so as to increase the patients' quality of care and independence.

The effective behavioural change strategies are to use the stages of change model, motivational interviewing and cognitive behavioural therapy. Motivational interviewing is a therapeutic discussion in a respectful manner with the intention to motivate an internal, fundamental change within the patient. For the process to be successful, it involves six key elements, these are; feedback about the patients' personal status such as risk factors, emphasis on personal responsibility to change, advice to change, suggestions of approaches to which change might be achieved, a good counselling style and delivering messages that support self-efficacy for change. Listening has been emphasized in the article, as studies have shown that listening is an effective method when handling people suffering from addictions and obesity.

The cognitive behavioural therapy motivates the person to be successful in making and maintaining behavioural change. Diabetic patients' need radical changes so that they can be able to minimize further complications from the disease. The patient needs to be in full understanding of the implications of lack of proper care of oneself can lead to. While giving guidance to a diabetic, it is important to focus on reforming attitudes, cognitive behavioural therapy recognizes barricades to change, therefore it focuses on helping people to modify their behaviour and overcome barriers to any change. During patient guidance, it is important to remember at all times that all patients are different and they all have different life situations, beliefs and opinions.

Asking well thought questions to patients' results to positive outcomes. Questioning the patient is one of the best means of determining patients' needs, abilities, fears, beliefs and offers a better understanding for the nurses on their patients. Health care providers should be neutral and non-judgemental when asking patients' questions. By asking questions of salient beliefs, this provides the nurse with an insight on the patients' beliefs, fears and concerns about a certain behaviour or condition. It can be a daunting task while guiding or teaching a patient without knowing and understanding the patient. In some cases, health professionals do not take their time to ask patients question and start guiding the patient without any kind of framework on who one is teaching. Nurses should avoid the use of confrontation and coercion as they are ineffective motivators; patients tend to respond poorly to being pushed to change.

5.1.2 Goal setting

Goal setting is vital in the care of chronic illnesses, to improve chances of success, diabetes should set goals that are smart, specific, measurable, achievable, and realistic and time bound. At the beginning of the long journey for a diabetic, it is mandatory for one to have set goals. Patients suffering from diabetes have certain areas which they have to set medical goals in-order to achieve the best lifestyle after being diagnosed with the disease. These areas are; blood glucose goals, weight and activity, glycaemia and lipid levels. Goals are made by the patients together with their doctors and nurses. It has been suggested that ``there is evidence that suggests that goal setting is a very important motivational force for improving performance in a wide range of activities, including people's health-related behaviour''.

Goal setting theory predicts that, setting specific difficult goals leads to higher performance when compared with no goals or vague non-quantitative goals, such as ``do your best ´´. An example of such a goal is, to lose weight and exercise more, do your best, instead of setting ambitious goals; a diabetic should be encouraged to develop intermediate achievable goals. Commitment is a very essential component in goal setting; commitment is required from all the parties involved in setting the goals. Health professionals are always encouraged to motivate patients in achieving the set goals nonetheless patients are expected to work hard so as to achieve the set goals. It has been reported by various studies that it is primarily the role of the nurse to guide patients with planned, intentional and systematic guidelines which help the patient achieve the set goals. Goals can be defined as;``goals are defined as those outcome behaviours targeted for change during diabetes education. Target behaviours may include meal planning, exercise, self-monitoring of blood sugar or medication taking´´.

5.1.3 Continuity of care

All diabetic patients need follow up care. In the short term, the set goals are evaluated, problems that the patient may have incurred are reviewed, if due to any reason the planned goals are not being met, the management plan is revised and goals are re-assessed. Weight and blood pressure are measured to check for any indications of weight gain or loss and to monitor the patient's blood pressure. The

following are some of the long-term continuers care recommendations the article gave:

- Comprehensive dilated eye and visual examinations should be performed annually
- Diabetics should receive thorough foot examination at least once a year to identify high-risk foot conditions.
- Approximately every three month HbA 1c, this reflects mean glycaemia over three months, should be carried out.
- Annually a diabetic should be tested for lipid disorders with fasting serum cholesterol, triglyceride, HDL cholesterol and calculated LDL cholesterol measures.

5.2 Contents of guidance

Treatment of diabetes mellitus is a lifelong commitment that involves; monitoring blood sugar, healthy eating, regular exercises and diabetes medication/insulin therapy. It has been reported that diabetes is better managed through the use of holistic integrated approach whereby patients are encouraged to adopt health lifestyle changes to improve weight and physical activity levels to know what their blood pressure, cholesterol and blood glucose levels are and to know what these levels should be and how to achieve this targets.

5.2.1 Dietary Guidelines

The amount and type of food consumed and the timing of eating are integral components of the management of diabetes. Dietary guidelines are founded on evidence-based principles and recommendations, as well consensus and expert opinion. The role of health professionals is to assist patients to achieve and maintain optimal metabolic and physiological outcomes. Nutritional objectives should be determined in partnership with the patient, taking into account individual needs and helping him/her to adopt and maintain a healthy lifestyle within the context of his or her culture and associated food preference.

It is important that goals for weight management are set in partnership with the patient and are realistic and practical. Between individuals there will be variable rates of weight loss depending on a variety of factors, including personal and genetic, ethnicity, age, gender and previous weight loss. It has been suggested that, weight loss is further complicated by increased availability of high-fat foods and reduced weight opportunity for physical activity. Studies such as the Finnish Diabetes prevention study have highlighted the importance of lifestyle changes aimed at reducing weight as having a major role in preventing or delaying diabetes mellitus in people with impaired glucose tolerance.

Dietary management is an integral component of the overall management of type 1 and 2 diabetes. The plethora of dietary information available to patients from a variety of sources can make the implementing dietary change a confusing and stressful process. Healthcare professionals should ensure that the dietary advice provided is clear and consistent to enable patients to make informed choices and achieve glycaemia control.

5.2.2 Insulin therapy

The treatment of diabetes mellitus is multi-faced because the disease is heterogeneous, encompassing a variety of disease processes. While making decisions about treatment, it is important to take into account the circumstances and the medical history of the patient, this makes it difficult to define a set of criteria that should be followed by every patient. Having said that, the aims of treatment remain the same for all patients, these are; to control initial symptoms as well as prevent the long-term complications associated with diabetes mellitus. Efficacy of anti-diabetic treatments is monitored by reviewing symptom control urinalysis and random blood glucose level measurements. On the other-hand, a different study argued that ``self-monitoring of blood glucose is important if there is a good reason to do it but it should not be considered as a stand –alone intervention, it is usually only suggested in times of illness or infection``. Glucose self-monitoring is a process that a diabetic patient needs to learn and carry out daily.

Insulin therapy is one of the core treatments of diabetes. Insulin therapy is the most important part of treatment. Insulin is administered subcutaneously by injections;

patients can administer insulin by themselves after being guided on how to do it, how much to administer and when to do it. Treatment with insulin mimics the non-diabetic insulin secretion in normal persons with the slow basal delivery throughout the day (intermediate or long acting insulin) and it is boosted at meal times (rapid acting insulin). According to a different author, the aims of insulin therapy are; to alleviate symptoms, for example polyuria, polydipsia and fungal infections, to minimize the risk of long-term micro vascular complications, for example, retinopathy (eye damage), neuropathy (nerve damage) and nephropathy (kidney damage) and improve the patient's quality of life.

The approximate acceptable blood glucose values should be 4.4-6.7mmol/l before meals and 5.8-7.8mmol/l at bedtime. High levels of blood glucose cause hyperglycaemia while low levels cause hypoglycaemia. Insulin therapy is done along with glucose self-monitoring. It is done three to six times a day depending and the measure indicates to the patient how much insulin they should administer at a time. In a recent study, the author argued that insulin therapy is not suitable for all patients and requires considerable commitment from patients. Also, young adolescents may not feel comfortable injecting themselves in-front of their peers. The choice of insulin regimen and insulin therapy should be made on an individual basis taking into account social circumstances lifestyle, osmotic symptoms and weight.

Oral hypoglycaemic agents should not be prescribed until stringent efforts have been made to control diabetes mellitus by the use of diet and lifestyle changes. In earlier researches, it has been suggested that weight loss and increased exercise can more than halve the risk of developing diabetes mellitus in patients with impaired glucose tolerance. In many instances eighty per cent of patients with diabetes mellitus are overweight at the time of diagnosis and being overweight increases insulin resistance. Weight reduction is a top priority in the life of a patient suffering from diabetes, unfortunately, in some cases, drugs used in the treatment of diabetes can cause an increase in body weight.

Diabetes mellitus is a complex disease to treat. Control of blood glucose levels should be part of holistic and patient-centred approach, which also addresses lifestyle, diet, blood pressure and blood lipids. Due to the complexity of the disease, this inevitably means that treatment regimens can be demanding. Patients require

education and an open discussion involving them in order to develop good concordance with regimens. Selecting the correct medicines and the correct way of administering those medicines is vital to achieving the treatment goals of relieving symptoms, reducing further complications and preserving a good quality life.

5.2.3 Exercise

When a diabetic person performs physical exercise, there is an increased risk of hypoglycaemia (Low blood sugar) if enough carbohydrate is not eaten in the correct time. On the other hand over eating carbohydrates can cause hyperglycemia (high blood sugar). The diabetic patient thus is responsible for balancing the correct amount of carbohydrates with insulin to sustain them through physical exercise.

5.2.4 Foot care

Early records of diabetes in the 19th century described foot problems as one of the major complications of the disease even today with advances in medical technology and large amounts of research, foot ulceration and subsequent amputation are fifteen times higher in people with diabetes than in the general population have shown the size of the problem and the enormous financial costs. According to a recent article, the author indicated that foot problem in people with diabetes develop for a number of reasons. The main contributing factors are peripheral, neuropathy, peripheral vascular disease and infection. While everyone with diabetes should be considered at risk of developing foot problems, the ultimate aim is to prevent ulceration, as eight five percent of major amputations are preceded by foot ulceration.

Foot care and patient education are a vital part of the holistic care that should be offered to all people with diabetes, irrespective of age or length of diagnosis. The diabetic patients need to be aware of the potential problems that can arise if they do not take care of their feet. A recent article emphasized that even patients who have no risk factors need health promotion and education to help them prevent future complications. In general, patients with diabetes have a higher than average risk of developing foot problems, which can lead to ulceration, infection and ultimately amputation. Nurses have a vital role to play in the assessment, diagnosis

and management of foot problems, which is essential in preventing debilitating complications.

5.3 Supporting self-management of diabetes

Self-management related to diabetes is complex with treatment recommendations difficult to incorporate into existing lifestyle. Self-management focuses on regulating carbohydrate and caloric intake and increasing physical activity, which are difficult lifestyle changes, encompassing a multitude of individual barriers. According to a recent study, this statement clearly depicts what an impossible task self-management can be especially when accuracy, persistency, patience and commitment are required to carry out the tasks needed. Self-managing oneself can be said to be acquired skills, with time, a patient is able to polish his skills in taking care of themselves according to his individual needs.

Self-management related to diabetes is complex with treatment recommendations difficult to incorporate into existing lifestyles. Self-management focuses on regulating carbohydrate and caloric intake and increasing physical activity, which are difficult lifestyle changes, encompassing a multitude of individual barriers.

Self-care in diabetes is crucial in keeping the disease under control. Self-care consists of at least four aspects: self-monitoring of blood glucose, variation of nutrition daily needs, insulin dose adjustments to actual needs and exercising regularly. It has also been reported that diverse factors influence self-care such as knowledge, physical skills, emotional aspects and self-efficacy. The results of the research clarified that knowledge, physical skills, emotional factors as well as self-efficacy influence self-care which again affects metabolic control. There is an apparent difference between being guided to practice routines which the patient might perhaps not have the knowledge behind practicing them and one who has the knowledge and the know-how of self-efficacy. Flexible self-care indicates high level of self-care when patients are able to care for and manage the disease in a responsible and flexible way that does not affect their life extensively; they are able to cope well despite the illness.

There are various difficult self-care areas, these are: diet, managing diabetes outside home and adjusting insulin. These areas were also identified as those resulting in low

perceived self-efficacy. One way of increasing self-efficacy is by breaking down the difficult tasks into small manageable tasks that the individual can be able to master. Self care can also be improved by one attaining flexible self-care ways in which one relies on knowing one's body's cues and being able to handle them in an effective way. In-order for a patient to acquire flexible skills to manage their illness, they need knowledge. Knowledge has been described as; ``facts about the disease and its management that people with diabetes need to be familiar with to be able to perform self-care, for example, the right diet, knowledge about insulin action and duration time and suitable values for blood glucose``. The roots of self-management stem from how much knowledge a patient possesses, the less knowledge one has the poorer the results of self-efficacy will and vice versa for one who possess adequate knowledge.

5.3.1 Empowering the patient

In the recent years, there have been great strides that have been made in the treatment of diabetes, in spite of them; patients still do not achieve optimal outcomes as they are still subjected to devastating complications that result in a decreased length and quality of life. Health care systems have been designed to deliver acute symptom-driven care therefore delivering effective treatment for chronic diseases such as diabetes that require the development of a collaborative daily self-management plan becomes a big problem for both the care-givers and patients. The reality of the disease is, care-givers struggle dealing with a chronic disease for which daily care is in the hands of the patient. The road to empowering patients to manage their illness often leads to frustrated health givers as in some instances the attempts to encourage, cajole and persuade patients to perform self-care tasks are often met by patients who are unwilling to follow the advice given to them.

Self-management of diabetes is not an easy task this is because self-management plans have been designed to fit patients' diabetes but have not been tailored to fit their priorities, goals, resources, culture and lifestyle. To manage diabetes successfully, patients must be able to set goals and make frequent daily decisions that are both effective and fit their values and lifestyles, while taking into account multiple physiological and personal psychosocial factors. The health care providers can use intervention strategies that enable patients to make decisions about goals,

therapeutic options and self-care behaviours and to assume responsibilities for daily diabetes care are effective in helping patients care fro themselves.

Empowerment is a patient-centred collaborative approach tailored to match the fundamental realities of diabetes care. Patient empowerment can be defined as; `` as helping patients discover and develop the inherent capacity to be responsible for one's own life``. It is ironic that in diabetes care, patients are the experts of their own care as opposed to health professionals being the experts. This approach gives the meaning that knowing about an illness is not the same as knowing about a person's life hence patients are the primary decision-makers in control of the daily self-management of their disease.

In a nutshell, diabetes care can be described as collaboration between equals; professionals bring knowledge and expertise about diabetes and its treatment and patients bring expertise on their lives and what will work for them. For this approach to work, patients' need to be educated in ways that have been designed to promote informed decision-making and providers need to practice ways that support patient efforts to become effective self-managers. Patient individuality is often connected with the term empowerment therefore an individual who has been empowered has acquired self-worthiness, self-efficacy and a sense of power. In empowering patients this can mean that they have the necessary information and resources and learning skills which are important to them.

Empowerment is a journey which includes growth, adaptability and transition. Characteristics of empowerment have a range of options from which to make choices. Assertiveness and communication skills are skills of one who has been empowered. Empowerment includes certain goals which are learning to think critically, having the ability to redefine who one is, expressing anger and increasing one's positive self-image and overcoming stigma.

5.3.2 Support and confidence in living with diabetes

Diabetes is a demanding disease that is with the diabetic all year round. Managing it has demands that are continuers and also very unpleasant. In the face of diagnosis, worries about disability, loss of employment, financial stability and death are common and may become even more frequent over time. The disease involves

uncertainties related to the diagnosis and progress of the disease may lead to feelings of hopelessness and depression.

Support and confidence in living with diabetes is the most consistent factor associated with metabolic control, dietary self-management and psychosocial adjustment (diabetes-related distress). Previous research in diabetes and other chronic illness populations supports the positive effect of social support and self-confidence in performing specific health behaviours (self-efficacy) on a variety of health outcomes, such as quality of life, adherence to treatment recommendations, metabolic control and well-being.

Self-efficacy theory indicates that sources of self-confidence are obtained primarily through performance accomplishment, vicarious experience, verbal persuasion and self-evaluation of physiological and emotional states. It has been emphasized that many diabetes education interventions encompass strategies to enhance participants' self-confidence, yet most programmes have reported using verbal persuasion as the exclusive technique. Developments of interventions that incorporate all sources of self-efficacy are recommended as they are more likely to be efficacious. Examples include strategies such as goal setting, skill demonstration, culturally relevant video demonstrations, and peer support groups, stress management and problem solving of personal, physical and emotional issues.

It is equally important for the successful treatment of diabetes mellitus and prevention of related complications there is the need to understand how people feel about having this disease and its impact on their lifestyle. Different authors urge a holistic approach to diabetes care where the whole patient including all his emotions, fears and worries, is the centre of attention. In the empowerment process, the involvement of social support from family, friends and employers is important in reducing stress.

It was noted that, it has been presumed that diabetes-related emotional distress (feeling overwhelmed by the regimen) may be independently linked to poor self-care through less adherence to self-care. The results were conflicting regarding distress, self-care and social support. Social support has been analyzed and how it influences diabetes self-care. It had been found that those with emotional and instrumental

support from their families and friends had better self-care but did not measure distress explicitly.

6 Discussion

6.1 Discussion of findings

The purpose of this literature review is to describe the guidance of diabetic mellitus patients on self-management. The main goal is to illustrate how patient guidance helps patients in achieving self-management. In other words, the aim of patient guidance in patient suffering from diabetes is to achieve self-management. Different ways of patient guidance and areas which by patients need to self-manage themselves have been highlighted. The various ways that nurses can offer guidance in self-management have also been discussed.

Many issues of importance concerning patient guidance on self-management were found through conducting this literature review. One of the most important issues found was; According to Whittemore et al 2002, living with a chronic illness is stressful, requiring internal and external resources to maintain health and circumvent complications. There is not enough that can be said or written to emphasize that guiding patients on ways of self-management remains the key to curbing this disease that has already become an epidemic. Health providers continue to struggle with the realities of dealing with a chronic disease for which daily care is in the hands of the patient. Previously, there have been many methods developed for measuring compliance, techniques and strategies to promote adherence. Unfortunately, diabetes demands for more as it involves complex management and the diabetes require multiple daily care self-care decisions over the course of their lives.

The term ‘coping’ is used interchangeably with self-management. Coping is a complex word with many definitions; a distinction can be drawn by adopting the definition of coping as being a state of tolerating, minimizing, accepting or ignoring things that cannot be mastered (Richardson & Poole, 2001). In this context, the term ‘self-management’, however makes reference to the activities people undertake to create order, discipline and control in their lives (Debbie et al 2003). Coping with the

circumstances is one way of looking at what entails the lives of diabetes. They are expected to manage their illness but in the upside form what they do is cope with the situation presented in their lives. In the beginning of the journey of self-management, patients begin by coping with the new circumstances in their lives, in the long run, they learn on how to self-manage their illness.

According to Whittemore et al 2002, self-management is an integral aspect of living with a chronic illness, recognizing that persons with a chronic illness need to learn behaviours and make choices about these behaviours in the daily management of their illness. Patient guidance plays a very important role in establishing that the patients are well informed that diabetes mellitus is a disease that is managed by the patients and the one of the roles health professionals' play in the treatment of the disease is guiding the patient on how to self-manage it.

In any health care setting, physicians are responsible for giving orders in the kind of treatment patients will undertake; it therefore remains the role of the nurse to guide the patient through the new journey. Diabetic patients, at the initial stage of their diagnosis are very sensitive people. The reason being, they have been diagnosed with a chronic disease that entails a brand new lifestyle. They are required to make choices on various areas of their lives, choices concerning what kind of food to eat, what kind of treatment to undertake, what kind of lifestyle to lead among others hence the need of guidance and education. Diabetes is a life-long disease that treatment solely lays on the patients, success or failure of treatment depends on the patients' commitment and determination. Having said that, self-management and its efficacy remains the goal that each diabetic patient must achieve for a better life.

Nurse's play an important role in the life of a diabetic, in few words, it would be correct to call nurses 'the pathway to recovery for diabetes'. This is because nurses are responsible for educating and guiding patients in accomplishing self-management. In the articles reviewed, it was indicated in almost all the articles that, guidance with the objective of achieving self-management in patients is the key to improving the lives of diabetes this will result in reduced costs for tax-payers.

6.2 Trustworthiness

Reliability of data is connected to consistency, accuracy, precision, stability, equivalence and homogeneity. A reliable item or instrument is required to be consistent. Validity of content refers to the universality of content. It also evaluates whether the items of content are representative of the content domain that is looked for. A valid item or instrument measures something that is supposed to measure. (Lo-Biondo- Wood & Haber 2006)

Throughout the literature gathering process, the author only selected research articles based upon empirical studies. To ensure compliance with these criteria, only professional, scientific databases and peer reviewed scientific journals were used. Among the databases used were OVID, CINAHL and Science direct. The literature review method used in the research may give cause for biases. The author of this final paper acknowledges that the authors of the research articles may interfere with the results and conclusion due to their own interests, beliefs and experiences.

6.3 Ethical considerations

At the beginning of this project, the author of this final paper informed the supervisors at Laurea University of Applied Sciences concerned with research projects about the study, and sought permission to conduct the study. The supervisors granted permission to proceed with the study.
" Nurses as consumers of research must acknowledge about legal and ethical issues of research study to evaluate whether the researcher has ensured appropriate human rights" LoBiondo-Wood & Haber (2006):314. In accordance with this statement, as a nurse researcher, the author of this paper ensured appropriate patient rights considerations in the project. The author of this final paper bore in mind the ethical considerations from the research articles that have been used for the literature review.

7 Conclusions and recommendations

Diabetes Mellitus has evolved over the years to become one of the diseases that are causing serious human loss. According to research, diabetes mellitus is killing almost as many people as HIV/AIDS is. We (as health workers) have a responsibility towards the society to do as much as we can possibly do to educate people about the disease. People should be educated on ways of preventing the disease and also ways of living with it. Different researchers have come up with new methods of reaching the public in order to educate everyone on the serious implications the disease has. Nurses should educate, guide and advocate for their patients in the care of the disease. Health practitioners should also maximize all the opportunities they have in educating the public, for example, during patients visits, they should take advantage of the moment and educate the patients about the disease. Many people die of the disease because of lack on knowledge and also lack of the necessary skills to self-manage themselves.

In my recommendation of further studies, more research should be carried on improving self-management and efficacy at home; also research can be carried on nursing guidance both at home and in the hospitals and more research could be carried out on nursing guidance and interventions that can be practiced so as improve the ratings of self-efficacy.

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Appendix 1 Articles for the literature review

Author& the year of publication	Publication of the article	Purpose	Method of data gathering& participants	Central Findings	Significant Findings to this thesis	Title of the article
Arun K (2004)	Journal of Clinical Nursing	To explore self-care in diabetes to present a model of factors that affect self-care according to reviewed literature	A qualitative study: Literature review	Main components of the model clarify how knowledge, physical skills & emotional factors as well as self-efficacy influence self-care which again affects metabolic control	Outlined the factors which affect self-efficacy in management of diabetes	Self-care in diabetes: A model of factors affecting self-care
Hill J (2009)	Nursing Standard	To provide information to help nurses manage patients presenting with diabetes related complications	Qualitative study: Trials	Holistic& integrated approach to management of diabetes is very common. The study highlights that structured diabetes education	This information emphasizes on patient education so as to encourage self-management	Reducing the risk of complications associated with diabetes
Jerreaal L (2009)	Nursing standard	Provides an overview of the lifestyle advice and drug treatment of hyperglycemia in adults with type 2 diabetes and the value of patient education	Qualitative study: Literature review	Treatment for diabetes lifestyle changes such as diet and exercise and medication	Focused on educating patients on treatment through medication and individuals should be involved in goal setting and choice of treatment,	Treatment of hyperglcaemia in patients with type 2 diabetes

					they should also be provided with ongoing structured education support	
Kathaleen ,Briggs, Early, Armstrong (2009)	Journal of Tran cultural nursing	The aim was to assess diabetes dietary goals	Qualitative study: Interviews were held which included	Current dietary goals for both groups , suggesting that diet-related goals were successfully identified	Provides a clear outline on goals set for self-management and patients adherence to goals set	Assessing diabetes goals and self-management
Lowey A (2005)	Nursing standard	It outlines the pharmacological management of diabetes type 2	Qualitative study: Systematic review	Decisions about treatment should take into account the circumstances & the medical history of the patient, so it is difficult to define a set of criteria that should be applied to every patient	Provides information on medication and management during treatment.	Drug treatment of type 2 diabetes in adults
Martha M (2004)	Clinical Diabetes	Outlines the gap which exists between the promise and the reality of diabetes care	A qualitative study: Literature review	Providers can design their interactions with patients and their practices to better support self-management efforts	Provides a clear outline on the difficulties both the health care system and patients undergo while working on establishing possible	Empowerment and self-management of diabetes

					achievable self-management skills.	
Muhlhauser (2000)	Diabetic Medicine	Describes the concept of patient participation in medical decision making	Qualitative study: Literature review	The amount of additional and validated information which needs to be made available to involve patients in medical decision making is substantial	Provides an outline on the importance of patient education and its benefits in assisting the patients in decision-making	Evidence-based patient information on diabetes
Robin, W (2005)	Blackwell Publishing	To examine factors with metabolic control, self-management, diet and exercise behavior and psychosocial adjustment (diabetes-related distress) in women with type 2 diabetes.	Qualitative study: women diagnosed with diabetes type 2 aged between ages 30 yrs and 70 yrs were sampled.	Findings of this study indicate that support and confidence in living with diabetes was the most consistent factor associated with metabolic dietary self-management and psychosocial adjustment	It is important to consider all factors which affect self-management	Metabolic control, self-management and psychosocial adjustment in women with type 2 diabetes
Shilling F (2003)	Nursing Standard	Outlines factors that cause foot problems in people with diabetes.	Qualitative study: A literature review.	Findings of the article indicate that patients with diabetes have a higher than average risk of developing foot problems which can lead to	Provided literature on foot problems on diabetes	Foot care in patients with diabetes

				ulceration, infection and ultimately amputation		
Wallymah med M (2006)	Journal of nursing standard	The study describes the role of insulin therapy in the management of patients with type 1 and 2 diabetes	Qualitative study: Literature review	Insulin therapy is the only treatment option available for patients with type 1 and 2, therefore, education should be aimed at encouraging self-management skills	Guidance on insulin therapy to patients	Insulin therapy in the management of type 1 and type 2 diabetes
Vaughan L (2005)	The article outlines guidelines for the dietary management of diabetes	The study aims at reducing inconsistencies in dietary recommendations	Qualitative study: Literature review	Dietary management is an integral component of the overall management of type 1 and 2 diabetes.	Provided clear information on dietary guidelines	Dietary guidelines for the management of diabetes